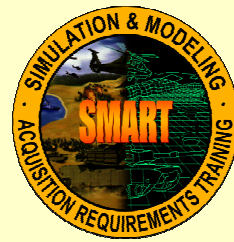
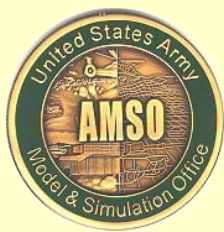


Simulation and Modeling for Acquisition, Requirements & Training (SMART) Presented to Director Ministry of Defense Simulation Based Acquisition Initiative

**AMSO
Crystal Gateway North
Suite 503E
1111 Jefferson Davis Hwy
Arlington, VA 22202**

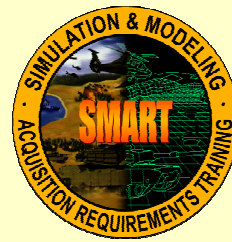
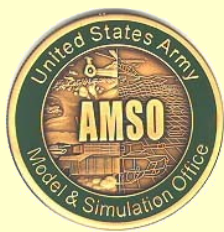
October 24, 2001

**W. H. (Dell) Lunceford, Jr.
Director
(703) 601-0013, ext. 11
<http://www.amso.army.mil/smart/>**

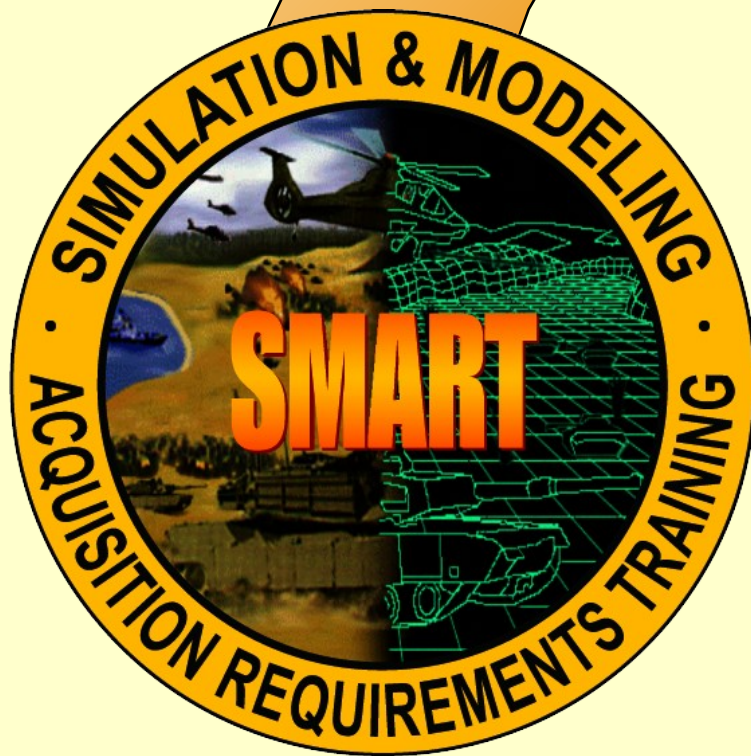


Agenda

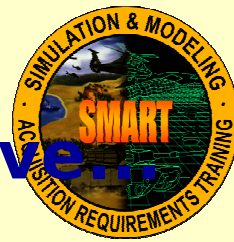
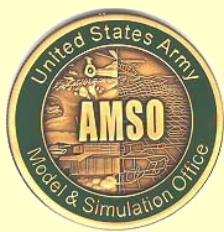
- **The SMART Concept**
- **Collaboration**
- **Architecture**
- **Life Cycle Costs**
- **Test and Evaluation**
- **The Army Transformation**
- **Future Combat Systems**
- **Crusader**
- **The Way Ahead**



SMART Definition



SMART is a process in which we capitalize on Modeling and Simulation (M&S) technology to address the issue of system development and life-cycle costs through the combined efforts of the requirements, training and acquisition communities.



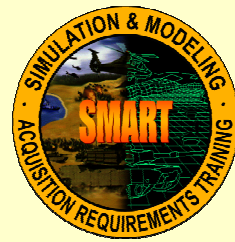
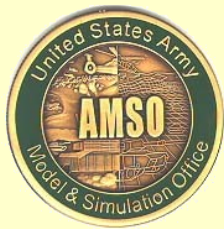
SMART: A Little Historical Perspective...

**1997...New MILDEP
briefed on OSD
Simulation Based
Acquisition (SBA)
Initiative**

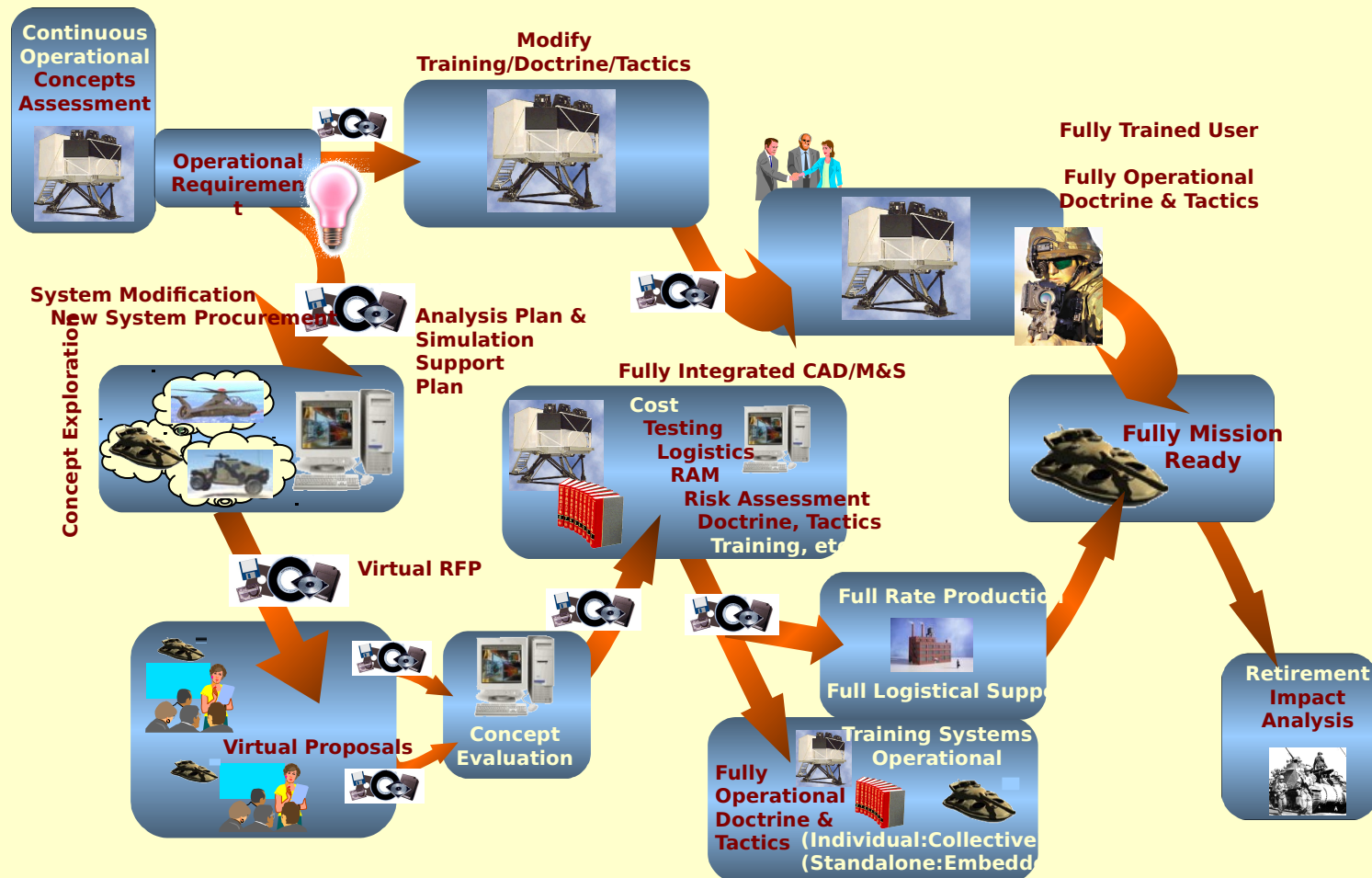
**“SBA...this is not about sn
business...give me a new name; one
that captures the idea of
collaboration among the 3
communities”**

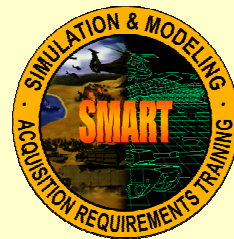
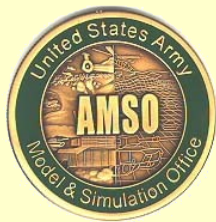


**LTG Paul J. Kern, Military Deputy to the
Assistant Secretary of the Army
(Acquisition, Logistics and Technology)
Army Model & Simulation Office**




SMART Concept






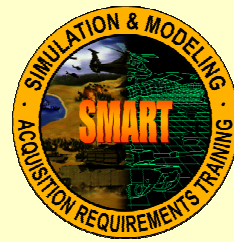
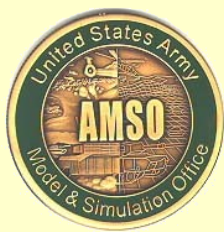
SMART Vision

Be a world leader in Modeling and Simulation to continuously improve Army effectiveness through a disciplined collaborative environment in partnership with industry, government, and academia.


LARRY R. ELLIS
Lieutenant General, GS
Deputy Chief of Staff
for Operations and Plans


PAUL J. KERN
Lieutenant General, GS
Military Deputy to the
Assistant Secretary of the
Army (Acquisition, Logistics
and Technology)

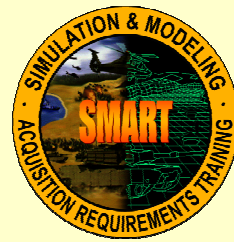
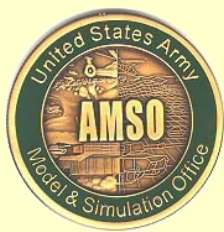

Walter W. Hollis
Deputy Under Secretary of the Army
(Operations Research)



Designated Executive Agent

- AMSO -

- **Developed the Planning Guidelines for SMA**
- **Developed the SMART Execution Plan**
- **Hosted the SMART Conference Series**
- **Coordinating Execution Plan Implementation**
- **Conducting SMART Education**
- **Compiling a “Best Practices Manual”**



Collaboration is the Heart of SMART

**Collaboration With
Contractors...**

**Entertainment Industry...
Government**

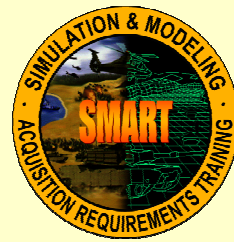
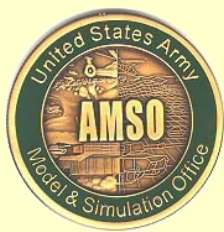
**Organization Across
Functional Areas...
Academia...**

Milestones...

Programs...

Collaborative Environments



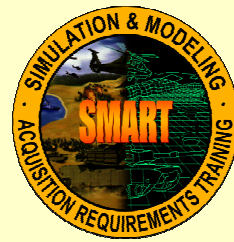
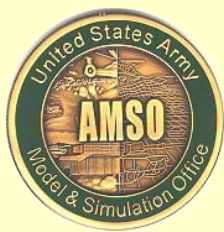


Architectural Principles

- **Generalization is not free nor is it always the best answer**
- **The worst thing you can do is spend a lot of money on technology**
- **There is no right answer**

SMART Execution Plan focus:

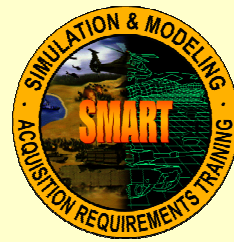
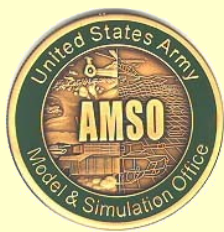
- **Develop a collection of reference models,**
- **Leverage Federation efforts,**
- **Develop standards for data and information exchange**
- **Document and promulgate**



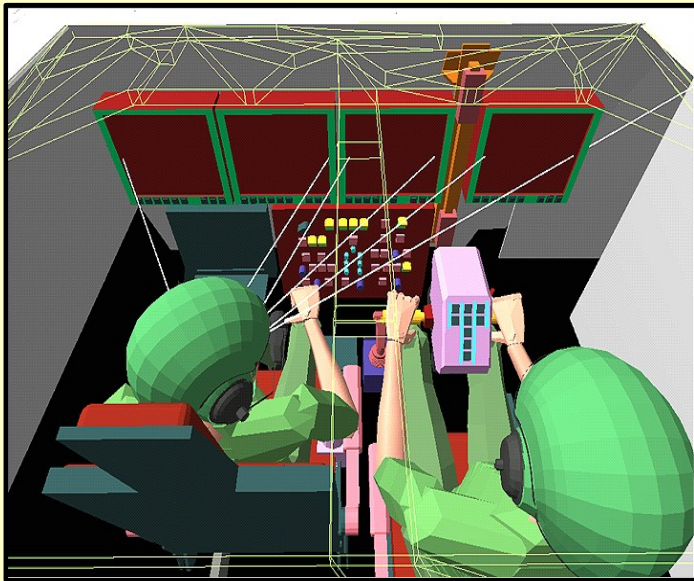
What Will SMART Achieve?

- **Reduced Total Ownership Cost (TOC), Time to Initial Operating Capability (IOC), and Logistics Tail**
- **Increased Supportability, Maintainability, and**
- **More Effective, Cost Efficient Training at Individual, Crew, and System Level**



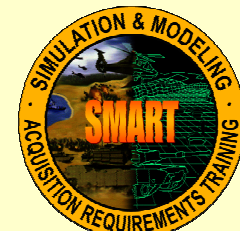
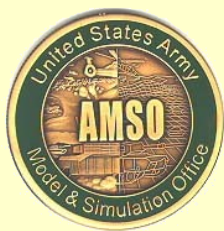


Test and Evaluation Roles

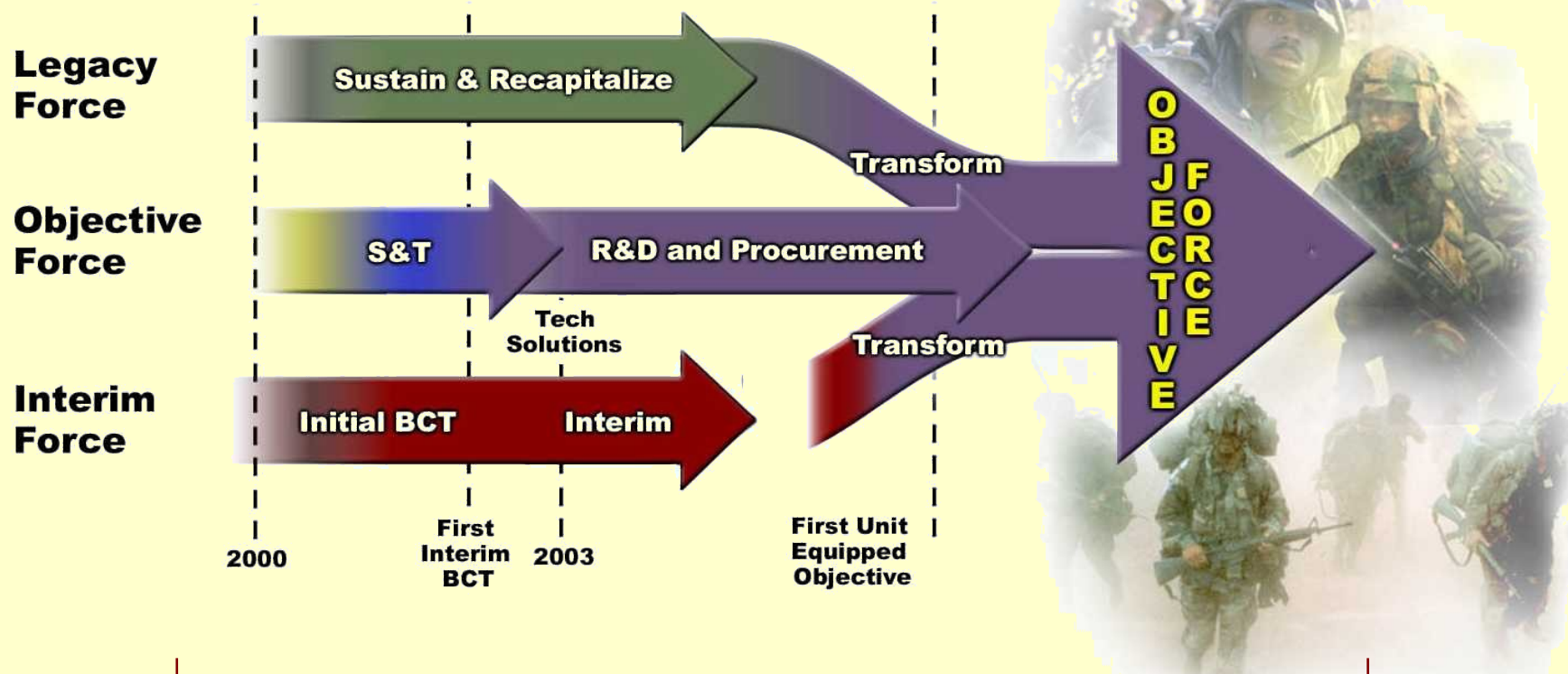


**Design Model for Assessing
MANPRINT for Grizzly Breacher**

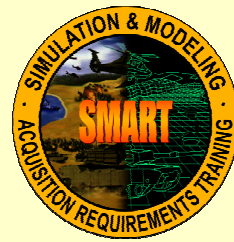
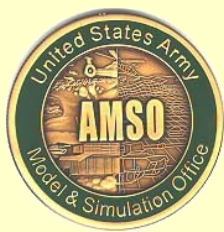
- **Incorporate Long Term Planning for the Right mix of Simulation and Testing**
- **Evolve the Virtual T&E Infrastructure**
- **Conduct “What-if” Drills for Early Development of T&E Plans and Scenarios**
- **Accelerate the Synergies Between the Testing and Training Communities**
- **Ensure T&E Community Participation in all M&S Planning and Accreditation to Facilitate Acceptance**



The Army Transformation



**Responsive, Deployable, Agile, versatile,
Lethal,
Survivable and Sustainable**



The Army's Transformation

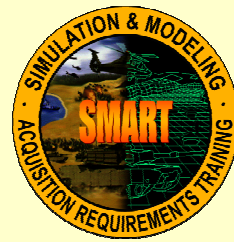
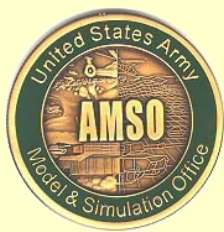
Is Dependent on SMART

- **M&S is required to meet the timelines specified and remain within the budget constraints**
- **The SMART Execution Plan is intricately woven throughout to the Army's Transformation Campaign Plan**

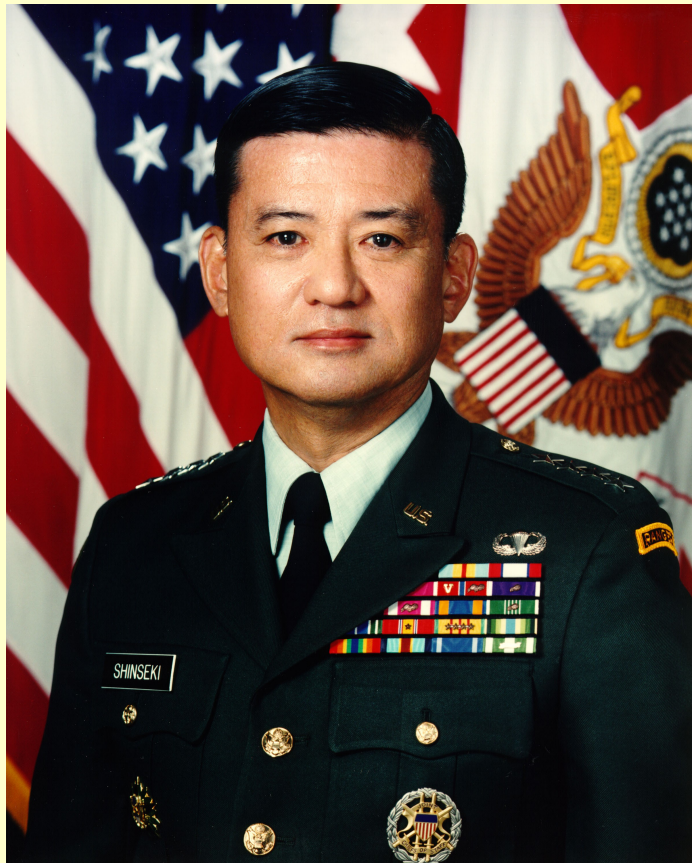
"To obtain the Objective Force as rapidly as possible, the Army will maximize use of the SMART initiative."

Army

Modernization Plan 2001



CSA Statement of the Problem

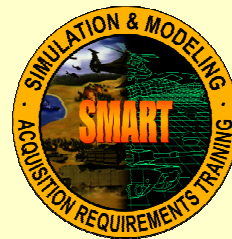
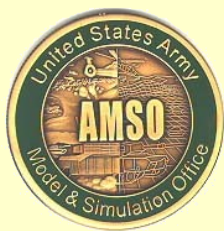


"We must provide early entry forces that can operate jointly, without access to fixed forward bases, but we still need the power to slug it out and win decisively. Today, our heavy forces are too heavy and our light forces lack staying power. We will address those mismatches." --

GEN Shinseki, CSA, 23 June

Army Model & Simulation Office

1333



M&S is a Means...

FCS

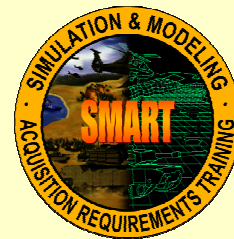
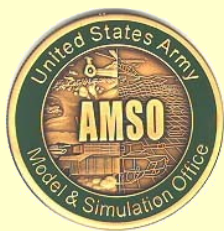
Experimentation to Gain Insights

M&S

Contractor Proposal Evaluation

FCS Analysis

FCS Test & Evaluation Training



FCS Collaborative Environment

Future Combat Collaborative Environment

PMO FCS



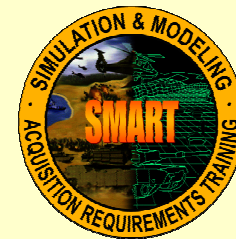
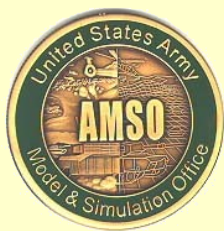
PMO FCS

FCS Integrated Data Environment (IDE) & Distributed Product Description



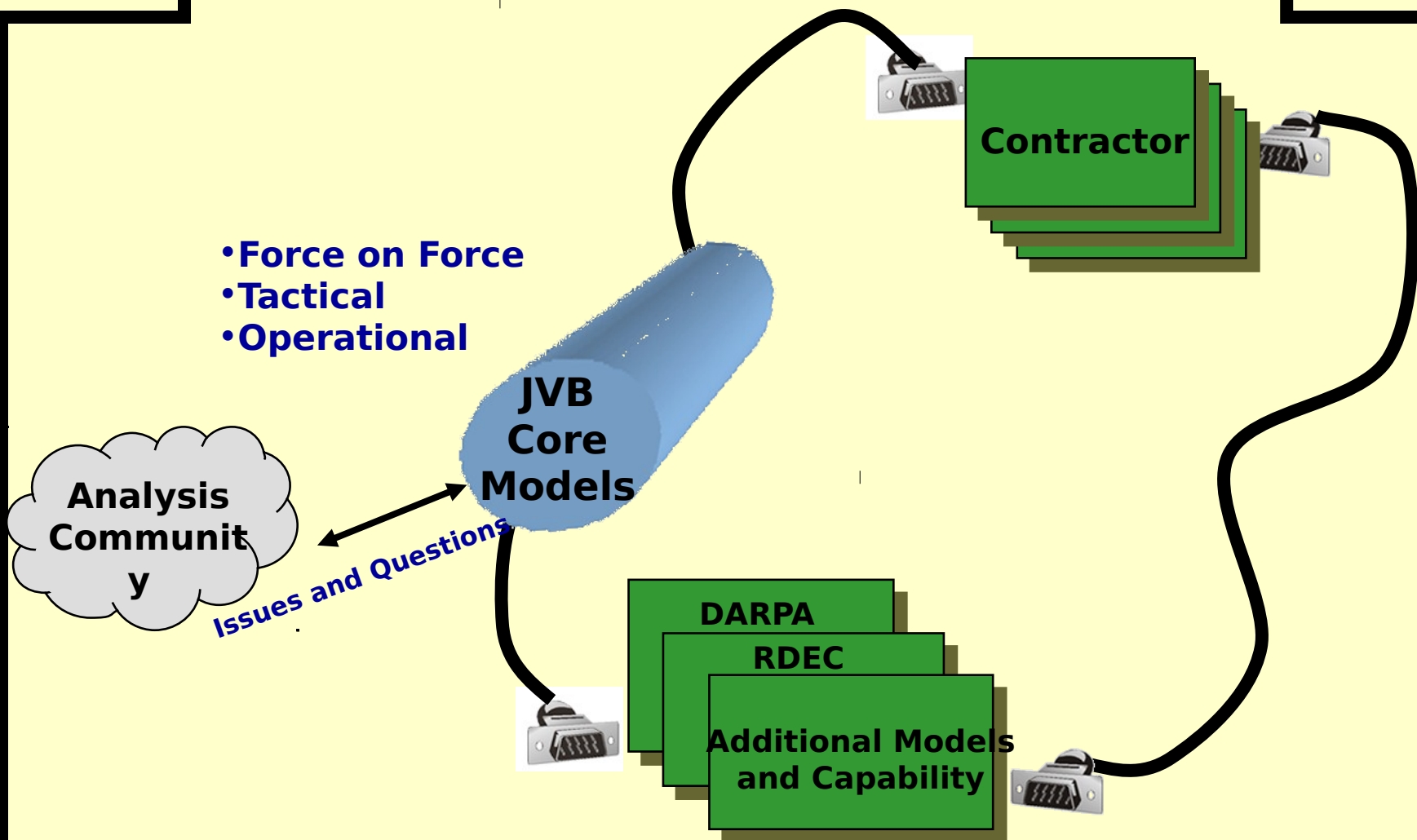
Design, Engineering, Manufacturing Collaborative Environment

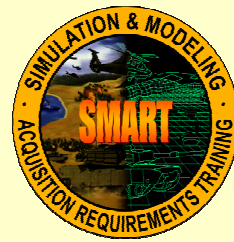
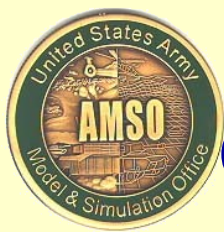
Contractor Team



JVB Strategy

- Force on Force
- Tactical
- Operational

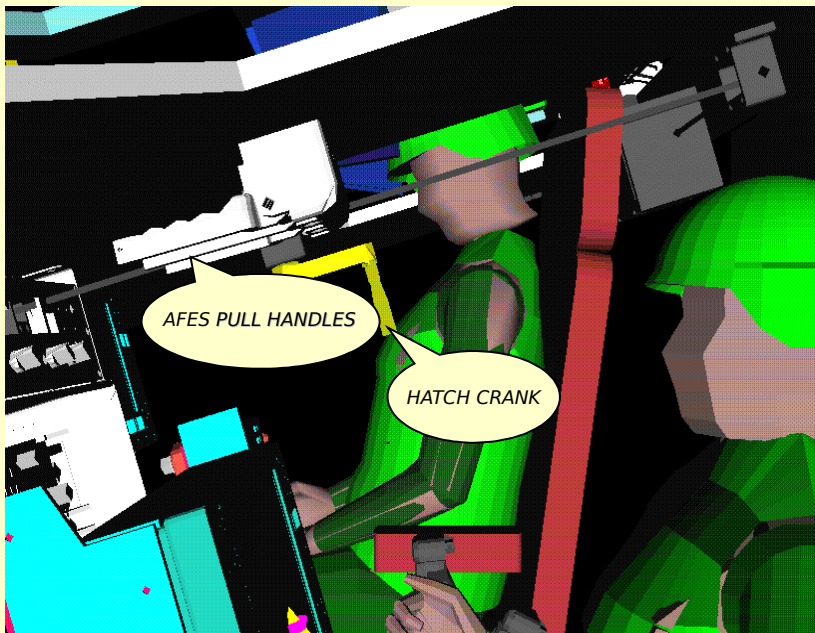




Crusader-Engineering Design

Objective:

- Use M&S to reduce test - fix - test scenario

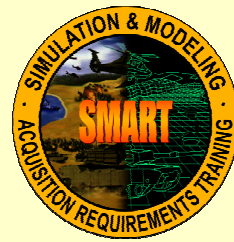
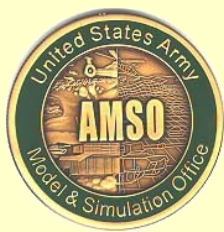


Hatch Linkage Mechanism



Lessons Learned:

- M&S Dynamic Visualization helps Designers cope with complex situations
- Volume claims cannot change unilaterally - require continuous communication



The Way Ahead ...

The **SMART Execution Plan** will serve as the vehicle to guide the institutionalization of SMART throughout the Army.



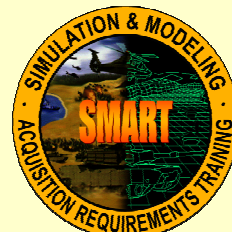
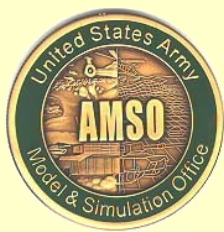
**SIMULATION AND MODELING
FOR ACQUISITION,
REQUIREMENTS AND TRAINING**

EXECUTION PLAN

6 November 2000

- Approved by the Army Model and Simulation Executive Council co-chairs on 6 November 2000.

- Provides justification for a SMART budget.



Planning Guidelines for SMART

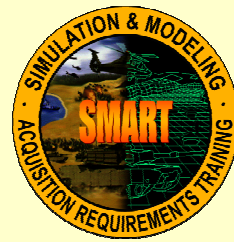
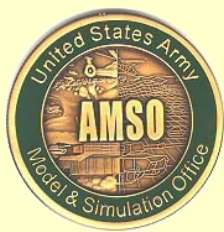
The “Guidelines” Preliminary Draft was released at the Jan 00 SMART Conference, with final approval given by the AMSEC co-chairs in August.

Major Changes Over the Original Version:

✓ TRADOC revised TP 71-9 to have preparation of SSPs begin as part of the Integrated Concept Team (ICT) process. SSP is then passed off to materiel developer when program office is stood up.
(SSPs become living documents!)

✓ Revised Guidance focuses on how we can **SMARTly** develop M&S with close attention to possibilities of re-use, commonality, credibility, and interoperability





SMART 2002 Conference

Location: Salt Lake City, Utah

Date: 16-18 April 2002

Purpose: Promote the SMART concept, educate the Army on SMART applications and successes, and demonstrate the technology.

Audience: Acquisition, Requirements and Operational Communities, Academia and Industry

Will feature tutorials, speakers, panels, and exhibits

Army Model & Simulation Office

<http://www.amso.army.mil/smart>